SONY

White paper

May 2012

XPERIA ion

LT28i

Purpose of this document

Sony product White papers are intended to give an overview of a product and provide details in relevant areas of technology.

Document history

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Sony Mobile Developer World

For the latest technical documentation and development tools, go to *http://developer.sonymobile.com/wp.*

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Product overview

Sony Xperia™ ion – Experience Intense Power

There's fast, and then there's *fast*. So why wait? Browse the web and download apps at incredible speeds. Shoot HD videos, take pictures in a snap, and share them all on the stunning 4.55" HD screen. In just a few clicks, enter a wider world of movies, music, and games. With the Sony Entertainment Network*, boredom is never an option.

Get what you want...fast

Get what you want without the wait. Browse the web, stream music, watch videos. Download your favorite games and apps. All in an instant. On LTE network and a 1.5 GHz dual processor, the Xperia™ ion keeps you connected. Always. And fast.

See every detail

Experience videos, photos and your favorite TV shows in vivid, bright colors on the stunning 4.55" HD Reality Display with Mobile BRAVIA® Engine. Crisp images. No jagged edges. With reduced light reflection, the picture stays clear when you're outdoors too. Merely the best entertainment experience in HD.

Snap your shots in an instant

Some events are too good to miss. Now you don't have to. Activate your 12.1 MP camera and take your first shot in just over a second. Keep shooting with only one second between shots. No delays. No missed moments. Even in low light conditions, the Exmor R™ for mobile camera sensor lightens up any gloomy day.

Show it like it is

Vacation videos, baby's first steps…record it all in brilliant HD video with one touch of a button. Connect your Xperia ™ ion to an HD TV and relive those moments from the comfort of your couch. Want to share moments together? Chat away on the front-facing HD chat-cam. Perfect for video calls.

**Sony Entertainment Network with Video Unlimited™ and Music Unlimited™ are not available in every market.*

Sony Entertainment Network*. Your ultimate source for digital entertainment

Hot tracks, latest films. Enjoy millions of songs and thousands of movies. It's all on Sony Entertainment Network services - Music Unlimited and Videos Unlimited, exclusive to Xperia™ smartphones. No trips to the store. No lines. No late fees. Just pure entertainment.

Enjoy everything with one account. It's the perfect fit for a life full of entertainment.

**Sony Entertainment Network with Video Unlimited™ and Music Unlimited™ are not available in every market.*

Signature features

The Sony Xperia™ ion comes with a range of features as standard. Below is a summary of the key signature features.

Xperia™ Timescape™

Communication made easy

The Timescape™ application manages all your communication with one person in one place. You can effortlessly browse by category your Facebook™, Twitter™, email and text communications, as well as view your photos. Now everything is all together and in chronological order, so you don't have to open different applications to see what's going on.

Xperia™ Infinite button

Everything you want – from everywhere

Tap the infinite button in the Timescape™ application and smart filter each category of communication by person. For example, when viewing a text message from a friend in Timescape™, tap the infinite button to view a list of all chat messages with that friend.

Xperia™ Local connectivity

More control over your media

Using Xperia™ Local connectivity, you can exercise more control over how media files get transferred and stored. For example, you can select MTP mode to transfer files if you want to limit the risk of data corruption or select MSC mode if you want to have more control over the data storage.

Xperia™ Home screen application

The place you call Home

Customise your Home screen with widgets, shortcuts, folders, themes, wallpaper and other items. Where’s best for you? Email top right? Music player bottom left? You decide. With four extensions to your Home screen, you’ve got plenty of space to put things where you want. Just remember to flick left or right to find them.

Facts – dimensions, weight, performance and networks*

Operating system	Google™ Android™ 2.3 (Gingerbread)
Processor	1.5 GHz Qualcomm MSM8260 Dual Core
GPU	Adreno 220
Size	133 x 68 x 10.8 mm
Weight	144 grams
Available colours	Black
SIM card	Micro SIM
Main screen	
Colours	16,000,000 colour TFT
Resolution	1280x720 pixels
Size (diagonal)	4.55 inches
Scratch-resistant	Shatter-proof sheet on scratch-resistant glass
Input mechanisms	
Text input	On-screen QWERTY keyboard
Touch screen	Capacitive
Touch gesture	Yes – multi-touch, up to 4 fingers supported
Memory	
Internal phone storage	2 GB (up to 1.8 GB uesr-accessible memory)
RAM	1 GB
Flash memory	16 GB eMMC
Expansion slot	microSD™ card, up to 32 GB
Camera	
Camera resolution	12.1 MP
Digital zoom	16x
Photo light	Yes
Video recording	Yes – HD 1080p
Front Camera	Yes – HD 720p for video chat and 1.3 MP for camera capture
Sensors	
Accelerometer	Yes
Proximity sensor	Yes

Ambient light sensor	Yes
Magnetometer	Yes
Gyroscope	Yes
Networks	
LT28i	UMTS HSPA+ 850 (Band V), 1700 (Band IV), 1900 (Band II), 2100 (Band I) GSM EDGE 850, 900, 1800, 1900 LTE Band IV and Band XVII
Data transfer speeds	
GSM EDGE	Up to 237 kbps
UMTS HSPA cat 6 (upload)	Up to 5.8 Mbps
UMTS HSPA cat 14(download)	Up to 21.1 Mbps
Talk time (GSM)	Up to 10 hours**
Standby time (GSM)	Up to 400 hours**
Talk time (UMTS)	Up to 4 hours**
Standby time (UMTS)	Up to 350 hours**
Music listening time	Up to 12 hours**
Video playback time	Up to 3 hours**
Embedded Battery	1900 mAh typical 1840 mAh minimum

**All performance metrics are measued under laboratory conditions.*

*** Values are according to GSM Association Battery Life Measurement Technique as performed in controlled laboratory conditions. Actual time may vary.*

NOTE: Battery performance may vary depending on network conditions and configurations, and phone usage.

Categorised feature list

Camera

3D Sweep Panorama™
12.1 megapixel camera
16x digital zoom
Auto focus
Face detection
Flash/Photo light
Front-facing camera (HD 720p)
Geotagging
HD video recording (1080p)
Image stabiliser
Red-eye reduction
Self-timer
Scene recognition
Send to web
Smile Shutter™
Sony Exmor R™ for mobile image sensor
Sweep Panorama™
Sweep Multi Angle™
Touch capture
Touch focus
Video light
Video recording

Music

Album art
Bluetooth™ stereo (A2DP)
Music Player
TrackID™ music recognition
xLoud™ Experience

Internet

Bookmarks
Google™ search*
Google Voice™ Search*
Google Maps™ for Mobile with Navigation, Places and Latitude™*
Pan & zoom
Google Play™
Web browser (WebKit™)

Communication

Call list
Facebook™ application*
Facebook inside Xperia™
Google Talk™ application*
Noise suppression
Xperia™ Timescape™
Speakerphone
Twitter™ (Timescape™ integration)*

Messaging

Conversations
Email
Gmail™*
Messaging
Multimedia messaging (MMS)
Predictive text input
Sound recorder
Text messaging (SMS)

Design

Auto rotation
Gesture input
Gyroscope
Keyboard (on-screen, QWERTY)
HD Reality Display with Sony Mobile BRAVIA® Engine
Screenshot capturing
Wallpaper

Entertainment

3D Album
3D games
Accelerated Adobe Flash Video
Media browser
Motion gaming
PlayStation® Certified
Radio (FM radio with RDS)
Sony Entertainment Network*
TV launcher
YouTube™*

Organiser

Airplane mode
Alarm clock
Calculator
Calendar
Contacts
Document readers
eCompass™
Infinite button
LiveWare™ manager
Notes
OfficeSuite
Setup guide

Connectivity

3.5 mm audio jack (CTIA)
aGPS*
ANT+ sports fitness
Bluetooth™ wireless technology
DLNA Certified®
GLONASS*
HDMI support
Media Transfer Protocol support
Micro USB support
Native USB tethering
NFC
USB High speed 2.0 support
USB host
Wi-Fi®
Wi-Fi® Hotspot functionality

** This service is not available in all markets.*

Technologies in detail

NOTE: The information outlined below is general and levels of compliance to standards and specifications may vary between products and markets. For more information, contact Sony Developer World or your Sony contact person where applicable.

Device-to-device communications (local)

Bluetooth™ wireless technology

Bluetooth™ profiles supported	Advanced Audio Distribution Profile v1.2 Audio/Video Remote Control Profile v1.0 Handsfree Profile v1.5 Headset Profile v1.1 Object Push Profile v1.1 Phonebook Access Profile v1.0
Core version and supported core features	Advanced Audio 2.1 + EDR
Connectable devices	Products supporting at least one of the profiles above.

More information:

http://developer.sonymobile.com/wp

www.bluetooth.com

Wi-Fi®

Supported standards	IEEE 802.11b/g/n and Wi-Fi®
Connectable devices	Wi-Fi® access points
Frequency band	2.4 GHz
Data transfer rate	Up to 72 Mbit/s
Security	WEP 64 bit WEP 128 bit TKIP CCMP (AES) Open Authentication Shared Authentication EAP-SIM EAP-TLS EAP-TTLS/MSCHAPv2 PEAPv0/EAP-MSCHAPv2 PEAPv1/EAP-GTC WPA Personal and WPA2 Personal WPA Enterprise and WPA2 Enterprise
Encryption	WEP, TKIP and AES
Power save	WMM-UAPSD QoS, WMM

DLNA Certified® (Digital Living Network Alliance)

Supported Device Classes	**M-DMS – Mobile Digital Media Server** Media Types: images Summary: The digital media server exposes the media files in your phone to a Wi-Fi® network. The files can then be accessed from other DLNA Certified® clients. **+PU+** Media Types: image, video and music Summary: Play media in the phone on another device, such as a TV or computer using 2-box push technology. +PU+ is integrated into the Gallery and Music applications. **M-DMP – Mobile Digital Media Player** Media Types: image, video and music Summary: Play content stored on another device, for example, a server or a PC, directly on the phone.
Supported Bearers	Wi-Fi®
DRM Support	The DLNA Certified® implementation does not support DRM-protected content.

Messaging

MMS (Multimedia Messaging Service)

According to OMA Multimedia Messaging Service v1.0 + SMIL

Email

Bearer type (IP)	GPRS, EGPRS, UMTS
Character sets	BIG5 Traditional Chinese GB18030 ISO-2022-JP Japanese ISO-8859-1 ISO-8859-2 Eastern Europe ISO-8859-5 Cyrillic ISO-8859-7 Greek ISO-8859-9 Turkish ISO 8859-11 KOI8-R Cyrillic Shift_JIS Japanese USASCII UTF-16 UTF-8 Windows® 874 Windows® 1251 Cyrillic Windows® 1252 Windows® 1254 Turkish Windows® 1258 Vietnamese
Protocols	POP3 and IMAP4
Push email	Microsoft® Exchange ActiveSync® (EAS)
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and START-TLS
HTML mail	Yes (read only)

More information:

http://developer.sonymobile.com/wp

www.openmobilealliance.org

Positioning – location based services

Supported standards:

- OMA Secure User Plane Location (SUPL) v1.0
- 3GPP™ Control Plane location (including Emergency location)
- Qualcomm® GPSOneXtra™

Supported satellite systems:

- GPS
- GLONASS*

* **NOTE***:* GPS and GLONASS are used together to calculate the position. Positioning is more robust and accurate in most conditions, if both systems are active. The benefits of using GLONASS are automatically available for all applications using the Satellite Positioning API ("GPS Provider" in Android terminology).

Provisioning (OMA CP)

OMA CP version 1.1

Multimedia (audio, image and video)

Audio Playback	**Decoder format**	**Supported in file format**
	Audio decoding MPEG-1/2/2.5, audio layer 3	MP3 (.mp3), 3GPP (.3gp), MP4 (.mp4, .m4a)
	AAC, AAC+, eAAC+	3GPP (.3gp), MP4 (.mp4)
	AMR-NB, AMR-WB	3GPP (.3gp)
	General MIDI (GM)	SMF (.mid)
	Linear PCM 16bit	WAV (.wav)
	OTA	OTA (.ota)
	Ogg vorbis	Ogg vorbis (.ogg)
Audio Recording	**Encoder format**	**Supported in file format**
	AMR-NB, AMR-WB	3GPP (.3gp), MP4 (.mp4), AMR (.amr)
	AMR-NB, AMR-WB, AAC-LC stereo Sample rate: 48 kHz Bit rate: 128 kbps	3GPP (.3gp), MP4 (.mp4)
Image Playback	**Decoder format**	**Supported in file format**
	1, 4, 8, 16, 24 and 32 bpp and RLE encoded formats	BMP (.bmp)
	Single and multi-frame, bitmap mask support (GIF87a format and GIF89a format)	GIF (.gif)
	Joint Photographic Experts Group	JPEG (.jpg)
	Portable Network Graphics Bitmap mask support	PNG (.png)
	Wireless Bitmap	WBMP (.wbmp)
Image Capture	**Encoder format**	**Supported in file format**
	Joint Photographic Experts Group	JPEG (.jpg)
Video Playback	**Decoder format**	**Supported in file format**
	MPEG-4 Simple Profile Level 6, Advanced Simple Profile Level 5	3GPP (.3gp), MP4 (.mp4)
	H.264 High Profile Level 3.2	3GPP (.3gp), MP4 (.mp4)
	H.263 Profile 0 Level 70	3GPP (.3gp)

Video Recording	Encoder format	Supported in file format
	Video H.263 Profile 0, H.264 Baseline Profile Audio: AAC-LC stereo, sample rate 48 kHz bit rate 128 kbps, AMR-NB	3GPP (.3gp), MP4 (.mp4)
Audio/Video Streaming	Streaming transport	RTSP according to 3GPP™ HTTP streaming
DRM	DRM (Digital Rights Management) – features the rights and copy protection of downloaded content	OMA DRM 1.0 Marlin DRM

Synchronisation (OMA DS, EAS, Google Sync™)

OMA Data Synchronisation protocol versions 1.1.2 and 1.2

OMA Data Formats: vCard 2.1, vCalendar 1.0

Microsoft® Exchange ActiveSync® protocol version 2.5

Microsoft® Exchange ActiveSync® protocol version 12

Microsoft® Exchange ActiveSync® protocol version 12.1

Google Sync™

Related information:

http://developer.sonymobile.com/wp

Web browser

Browser version	Android 2.3 Browser (Based on WebKit™)
Navigation/rendering	Adobe™ Flash™ 11 Full page PC rendering Landscape/portrait rendering Pan & Zoom Sharing links using NFC
Search	Internet search
Browser compliancy	CSS 2.0 CSS 2.1 CSS 3.0 DOM 2.0 DOM 3.0 HTML version. 4.0 HTML version. 5.0 JavaScript 1.7/ECMA-script 262 3rd edition WebGL 1.0 XHTML Basic version 1.0 XHTML 1.1
Supported Device API	Geo-location API
Protocol compliancy	Gzip HTTP/1.1 OMA Download 1.0 TLS 1.0 and SSL 3.0

Related information:

http://developer.sonymobile.com/wp

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